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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/532,352	03/21/2000	Kogo Endo	9319S-000127	7425

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EXAMINER	
LESPERANCE, JEAN E	

ART UNIT	PAPER NUMBER
2674	

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/532,352	ENDO ET AL.	
	Examiner	Art Unit	
	Jean E Lesperance	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *August 25, 2005* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *September 14, 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

.2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. The amendment with the request for continuation filed on August 25, 2005 is entered and claims 1-38 are pending.

Response to Arguments

2. Applicant's arguments with respect to claims 1-38 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 4, 5, 7, 8-10, 21, 25 and 32-38 are rejected under 35 USC. 103 (a) as being unpatentable over US Patent # 5,777,610 ("Sugimoto et al.") in view of US Patent # 5,467,210 ("Kishigami").

Regarding claim 1, Sugimoto et al. teach a display device (display device 11' of Figure 2) comprising:

a display panel having an electrooptic material layer on a glass substrate (a display device including a display panel, such as a liquid crystal display device (column 1, lines 8-10) where the electrooptic material is inherently included);

terminals formed on the glass substrate (circuit wiring 22 formed as a junction terminal 21 (fig.12));

the driver integrated circuit including bumps that are electrically connected to the terminals (The drive IC 5 may be mounted on the rear surface of the substrate via solder bumps 53 and 54 (column 14, lines 52-54)); and

a flexible circuit board having electronic components thereon, at least a portion of said circuit board overlapping the glass substrate, said electronic components opposing said driver integrated circuit, the circuit board being connected to said driver integrated circuit (each first flexible wiring board 19 is provided with output terminals 302 connected with the drive IC 16 along a side of its generally rectangular substrate 300, while input terminals 301 connected with the drive IC 16 are provided along a side opposite to the above-mentioned side(Figure 6)). The prior art teaches all the claimed limitations as recited in claim 1 with the exception of providing a driver integrated circuit mechanically fixed directly on the glass substrate.

However, Kishigami teaches integrated circuit IC 23, 21 and 22 mounted directly on the glass substrate 13 (see figure 10).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the Ics 21, 22, 23 as taught by Kishigami in the small-

sized display disclosed by Sugimoto because this would provide an inexpensive reliable arrangement of bonding an IC chip to an LCD device which enables a simple downsized flexible connector to be employed and increases the efficiency of a bonding step of an LCD module production (column 2, lines 34-37).

Regarding claim 2, Sugimoto et al. teach a display device (display device 11' of Figure 2) comprising:

a display panel having an electrooptic material layer on a glass substrate (a display device including a display panel, such as a liquid crystal display device (column 1, lines 8-10) where the electrooptic material is inherently included);

terminals formed on the glass substrate (circuit wiring 22 formed as a junction terminal 21 (fig.12));

the driver integrated circuit including bumps that are electrically connected to the terminals (The drive IC 5 may be mounted on the rear surface of the substrate via solder bumps 53 and 54 (column 14, lines 52-54)); and

a flexible circuit board having electronic components thereon, at least a portion of said circuit board overlapping the glass substrate, said electronic components opposing said driver integrated circuit, the circuit board being connected to said driver integrated circuit (each first flexible wiring board 19 is provided with output terminals 302 connected with the drive IC 16 along a side of its generally rectangular substrate 300, while input terminals 301 connected with the drive IC 16 are provided along a side opposite to the above-mentioned side(Figure 6)). The prior art

teaches all the claimed limitations as recited in claim 1 with the exception of providing a driver integrated circuit mechanically fixed directly on the glass substrate.

However, Kishigami teaches integrated circuit IC 23, 21 and 22 mounted directly on the glass substrate 13 (see figure 10).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the Ics 21, 22, 23 as taught by Kishigami in the small-sized display disclosed by Sugimoto because this would provide an inexpensive reliable arrangement of bonding an IC chip to an LCD device which enables a simple downsized flexible connector to be employed and increases the efficiency of a bonding step of an LCD module production (column 2, lines 34-37).

Regarding claim 4, Sugimoto et al. teach a control board 17 mounted on one of said first extended area Fig.4 (18) and said second extended area Fig.4 (18) corresponding to said control circuit board, mounted on one of said first extended area and said second extended area, extends so as to be connected to an end of an input wiring portion formed close to a shorter side of the other of said extended areas.

Regarding claim 5, Sugimoto et al. teach the electrode terminals at both ends of the control board 17 are connected with the terminals on one side of the control board 17 of the circuit wiring 141 and 142 on the circuit board 14 by the connector 18 (column 13, lines 38-41) corresponding to said control circuit board further comprises a circuit-wiring pattern formed on a flexible insulating resin substrate and electronic components provided for controlling a driving of said display panel.

Regarding claim 8, Sugimoto et al. teach the input terminals of the adjacent terminal board, connected portions of the junction and input terminals of the adjacent flexible wiring boards being located on the peripheral portion of the display panel (column 23, lines 5-9) corresponding to said control circuit board includes a flexible input wiring portion.

Regarding claim 9, Sugimoto et al. disclose an opposed substrate 12 opposed to the semiconductor device 11 and an electrooptical material layer or liquid crystal layer 13 interposed between the semiconductor device 11 and the opposed substrate 12 (column 10, lines 4-8) corresponding to said electrooptic material layer is a liquid-crystal layer.

As for claims 10, Sugimoto et al. teach a display device including a display panel, such as a liquid crystal display device, an EL (electroluminescence) display device (column 1, lines 8-10) corresponding to said electrooptic material layer is an electroluminescent light-emitting layer including a electroluminescent material.

Regarding claim 21, Sugimoto et al. teach the electrode terminals at both ends of the control board 17 are connected with the terminals on one side of the control board 17 of the circuit wiring 141 and 142 on the circuit board 14 by the connector 18 (column 13, lines 38-41) corresponding to said control circuit board further comprises a circuit-wiring pattern formed on a flexible insulating resin substrate and electronic components provided for controlling a driving of said display panel.

Regarding claim 25, Sugimoto et al. teach the input terminals of the adjacent terminal board, connected portions of the junction and input terminals of the adjacent

flexible wiring boards being located on the peripheral portion of the display panel (column 23, lines 5-9) corresponding to said control circuit board includes a flexible input wiring portion.

Regarding claim 32, Sugimoto et al. teach display panel having electrooptic material on a substrate (the display panel 11' is constituted by sealing liquid crystals 505 in a space between a pair of glass substrates 506 and 506' (Fig.2) corresponding to; four first flexible wiring boards 19 each of which is mounted with a drive IC 16 for outputting a signal for driving the display panel 11 (column 10, lines 47-49) corresponding to a driver integrated circuit mounted on an extended area an edge of the substrate, said extended area provided in at least a margin of said display panel; along the sides 12a and 12b are arranged circuit boards 14 and 14 having circuit wirings 141 and 142 for supplying a control signal to the drive ICs 15 and 16 respectively (column 10, lines 53-59) corresponding to wherein a circuit board having electronic components thereon is provided above said driver integrated circuit and substantially within said extended area, the circuit board connected to said driver integrated circuit; while the input terminals 107 are connected with corresponding electrode terminal 105 provided in an end portion of the circuit board 14 extending alongside of the display panel 11 (column 11, lines 30-35) corresponding to an input unit for inputting a signal to said display device.

Regarding claim 33, Sugimoto et al. teach the display panel having an electrooptic material layer sandwiched between a pair of substrates disposed opposite to each other (the display panel 11' is constituted by sealing liquid crystals 505 in a

space between a pair of glass substrates 506 and 506' (Fig.2)); four first flexible wiring boards 19 each of which is mounted with a drive IC 16 for outputting a signal for driving the display panel 11 (column 10, lines 47-49) corresponding to a driver integrated circuit mounted on an extended area an edge of the substrate, said extended area provided in at least a margin of said display panel; along the sides 12a and 12b are arranged circuit boards 14 and 14 having circuit wirings 141 and 142 for supplying a control signal to the drive ICs 15 and 16 respectively (column 10, lines 53-59) corresponding to wherein a circuit board having electronic components thereon is provided above said driver integrated circuit and substantially within said extended area, the circuit board connected to said driver integrated circuit; and while the input terminals 107 are connected with corresponding electrode terminal 105 provided in an end portion of the circuit board 14 extending alongside of the display panel 11 (column 11, lines 30-35) corresponding to an input unit for inputting a signal to said display device; it is inherent in the art to house the display panel corresponding to wherein said display device is accommodated in a casing.

Regarding claim 34, Sugimoto et al. teach a display device (display device 11' of Figure 2) comprising:

a display panel having an electrooptic material layer on a glass substrate (a display device including a display panel, such as a liquid crystal display device (column 1, lines 8-10) where the electrooptic material is inherently included);

terminals formed on the glass substrate (circuit wiring 22 formed as a junction terminal 21 (fig.12));

the driver integrated circuit including bumps that are electrically connected to the terminals (The drive IC 5 may be mounted on the rear surface of the substrate via solder bumps 53 and 54 (column 14, lines 52-54)); and

a flexible circuit board having electronic components thereon, said electronic components opposing said driver integrated circuit and said the circuit board being connected to said driver integrated circuit (each first flexible wiring board 19 is provided with output terminals 302 connected with the drive IC 16 along a side of its generally rectangular substrate 300, while input terminals 301 connected with the drive IC 16 are provided along a side opposite to the above-mentioned side(Figure 6)). The prior art teaches all the claimed limitations as recited in claim 1 with the exception of providing a driver integrated circuit mechanically fixed directly on the glass substrate.

However, Kishigami teaches integrated circuit IC 23, 21 and 22 mounted directly on the glass substrate 13 (see figure 10).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the Ics 21, 22, 23 as taught by Kishigami in the small-sized display disclosed by Sugimoto because this would provide an inexpensive reliable arrangement of bonding an IC chip to an LCD device which enables a simple downsized flexible connector to be employed and increases the efficiency of a bonding step of an LCD module production (column 2, lines 34-37).

Regarding claim 35, Sugimoto et al. teach a display device (display device 11' of Figure 2) comprising:

a display panel having an electrooptic material layer on a glass substrate (a display device including a display panel, such as a liquid crystal display device (column 1, lines 8-10) where the electrooptic material is inherently included);

terminals formed on the glass substrate (circuit wiring 22 formed as a junction terminal 21 (fig.12));

the driver integrated circuit including bumps that are electrically connected to the terminals (The drive IC 5 may be mounted on the rear surface of the substrate via solder bumps 53 and 54 (column 14, lines 52-54)); and

a circuit board having electronic components thereon, at least a portion of said circuit board overlapping the glass substrate, said electronic components opposing said driver integrated circuit, the circuit board being connected to said driver integrated circuit (each first flexible wiring board 19 is provided with output terminals 302 connected with the drive IC 16 along a side of its generally rectangular substrate 300, while input terminals 301 connected with the drive IC 16 are provided along a side opposite to the above-mentioned side(Figure 6)). The prior art teaches all the claimed limitations as recited in claim 1 with the exception of providing a driver integrated circuit mechanically fixed directly on the glass substrate.

However, Kishigami teaches integrated circuit IC 23, 21 and 22 mounted directly on the glass substrate 13 (see figure 10).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the ICs 21, 22, 23 as taught by Kishigami in the small-

sized display disclosed by Sugimoto because this would provide an inexpensive reliable arrangement of bonding an IC chip to an LCD device which enables a simple downsized flexible connector to be employed and increases the efficiency of a bonding step of an LCD module production (column 2, lines 34-37).

Regarding claim 36, Sugimoto et al. teach the electronic component of the circuit board is an integrated circuit (a flexible wiring board Fig.4 (19) with an integrated circuit drive (16)).

Regarding claim 37, Sugimoto et al. teach an insulation substrate disposed between the driver integrated circuit and the flexible circuit board (the circuit wirings 44 may be coated with an insulating resin in order to increase the reliability of insulation between the wirings (see Figure 13)).

Regarding claim 38, Sugimoto et al. teach a flexible wiring board Fig.4 (19) with an integrated circuit drive (16) where the flexible wiring board connects the input terminal to the electrical component of the wiring circuit board.

4. Claims 3, 6, 11-20, 22-24 and 26-31 are rejected under 35 USC 103 (a) as being unpatentable over US Patent # 5,467,210 ("Kishigami") in view of US Patent # 5,777,610 ("Sugimoto et al.").

Regarding claim 3, Kishigami teaches a display device having a display panel (an LCD device (column 1, line 9)) including:

a first glass substrate (7a) and a second glass substrate 6a) opposed to each other (Fig.9) ,

firs terminal formed on the first substrate Fig.9 (9b);

second terminal formed on the second glass substrate Fig.9 (8b)

an electrooptic material layer provided between the first and second substrates (an LCD device (column 1, lines 9) which is inherently include an electrooptic material layer;

a first extended area that integrally extends from the first glass substrate and is provided in one of two adjacent margins of said display panel wherein the first glass substrate extends further than an edge of the second glass substrate (7a) of fig.9);

a second extended area that integrally extends from the second glass substrate and is provided in the other of the two adjacent margins wherein the second glass substrate extends further than an edge of the first glass substrate (6a of fig.9);

scanning electrodes formed on a substrate of the first glass substrate opposed to the second glass substrate Fig.9 (8a);

data-signal electrodes formed on a surface of the second glass substrate opposed to the first glass substrate (fig.9 (9a);

a scanning driver integrated circuit connected to said scanning electrodes mechanically fixed directly on the first extended area Fig.9 (3c); and

a data-signal driver integrated circuit connected to said data-signal electrodes mechanically fixed directly on the second extended area (6a), a data-signal driver integrated circuit (3b) including bumps that are electrically connected to the second terminals Fig.9 (3b)

a flexible circuit board (Fig.9 (4) having electronic components thereon, at least a portion of said circuit board (4) overlapping at least one of the first glass substrate (7) and the second glass substrate (6a), said electronic component opposing at least one of said scanning driver integrated circuit (5) mounted in said first extended area (7) and said data-signal driver integrated circuit (4) mounted in said second extended area (6a); and

an input terminal portion (9b) of said scanning driver integrated circuit (3a) mounted in said first extended area (7a) and an input terminal (8b) portion of said data-signal driver integrated circuit (3c) mounted in said second extended area (6a); and

an input unit for inputting a signal to said display device (the common input wiring patterns 20 also extend in parallel to the longer side or side edge of the lower glass substrate 13 (column 4, lines 61-63); wherein said display device is accommodated in a casing (an LCD display inherently has a case). The prior art teaches all the claimed limitation with the exception of providing the scanning driver integrated circuit including bumps that are electrically connected to the first terminals.

However, Sugimoto et al teach The drive IC 5 may be mounted on the rear surface of the substrate via solder bumps 53 and 54 (column 14, lines 52-54).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the solder bumps as taught by Sugimoto et al. in the Kishigami because this would provide a display device which has a reduced size.

Regarding claim 6, Sugimoto et al. teach a control board 17 mounted on one of said first extended area Fig.4 (18) and said second extended area Fig.4 (18)

corresponding to said control circuit board, mounted on one of said first extended area and said second extended area, extends so as to be connected to an end of an input wiring portion formed close to a shorter side of the other of said extended areas.

Regarding claim 7, Sugimoto et al. teach along the sides 12a and 12b are arranged circuit boards 14 and 14 having circuit wirings 141 and 142 (column 10, lines 53-55) corresponding to said control circuit board which inherently has a multilayer structure having an insulating layer interposed between a plurality of wiring layers in which predetermined upper and lower wiring layers are connected via a through hole.

Regarding claim 11, Kishigami teaches an electronic (integrated circuit (column 1, line 8) apparatus comprising:

a display device having a display panel having an electrooptic material on a glass substrate (an LCD device (column 1, line 9)) including:

a terminals formed on the substrate (Fig.9 (9a));

a driver integrated circuit mechanically fixed directly on the extended area of the edge of the substrate (integrated circuit Fig.9 (3c));

a flexible circuit board (Fig.9 (4) having electronic components thereon, at least a portion of said circuit board (4) overlapping at least one of the first glass substrate (7) and the second glass substrate (6a), said electronic component opposing at least one of said scanning driver integrated circuit (5) mounted in said first extended area (7) and said data-signal driver integrated circuit (4) mounted in said second extended area (6a); and

an input terminal portion (9b) of said scanning driver integrated circuit (3a) mounted in said first extended area (7a) and an input terminal (8b) portion of said data-signal driver integrated circuit (3c) mounted in said second extended area (6a); and

an input unit for inputting a signal to said display device (the common input wiring patterns 20 also extend in parallel to the longer side or side edge of the lower glass substrate 13 (column 4, lines 61-63); wherein said display device is accommodated in a casing (an LCD display inherently has a case). The prior art teaches all the claimed limitation with the exception of providing the scanning driver integrated circuit including bumps that are electrically connected to the first terminals.

However, Sugimoto et al teach the drive IC 5 may be mounted on the rear surface of the substrate via solder bumps 53 and 54 (column 14, lines 52-54).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the solder bumps as taught by Sugimoto et al. in the Kishigami because this would provide a display device which has a reduced size.

Regarding claim 12, Kishigami teaches an electronic (integrated circuit (column 1, line 8) apparatus comprising:

a display device having a display panel (an LCD device (column 1, line 9)) including:

a first glass substrate (7a) and a second glass substrate 6a) opposed to each other (Fig.9) ,

firs terminal formed on the first substrate Fig.9 (9b);

second terminal formed on the second glass substrate Fig.9 (8b)

an electrooptic material layer provided between the first and second substrates (an LCD device (column 1, lines 9) which is inherently include an electrooptic material layer;

a first extended area that integrally extends from the first glass substrate and is provided in one of two adjacent margins of said display panel wherein the first glass substrate extends further than an edge of the second glass substrate (7a) of fig.9);

a second extended area that integrally extends from the second glass substrate and is provided in the other of the two adjacent margins wherein the second glass substrate extends further than an edge of the first glass substrate (6a of fig.9);

scanning electrodes formed on a substrate of the first glass substrate opposed to the second glass substrate Fig.9 (8a);

data-signal electrodes formed on a surface of the second glass substrate opposed to the first glass substrate (fig.9 (9a);

a scanning driver integrated circuit connected to said scanning electrodes mechanically fixed directly on the first extended area Fig.9 (3c); and

a data-signal driver integrated circuit connected to said data-signal electrodes mechanically fixed directly on the second extended area (6a), a data-signal driver integrated circuit (3b) including bumps that are electrically connected to the second terminals Fig.9 (3b)

a flexible circuit board (Fig.9 (4) having electronic components thereon, at least a

portion of said circuit board (4) overlapping at least one of the first glass substrate (7) and the second glass substrate (6a), said electronic component opposing at least one of said scanning driver integrated circuit (5) mounted in said first extended area (7) and said data-signal driver integrated circuit (4) mounted in said second extended area (6a); and

an input terminal portion (9b) of said scanning driver integrated circuit (3a) mounted in said first extended area (7a) and an input terminal (8b) portion of said data-signal driver integrated circuit (3c) mounted in said second extended area (6a); and

an input unit for inputting a signal to said display device (the common input wiring patterns 20 also extend in parallel to the longer side or side edge of the lower glass substrate 13 (column 4, lines 61-63); wherein said display device is accommodated in a casing (an LCD display inherently has a case). The prior art teaches all the claimed limitation with the exception of providing the scanning driver integrated circuit including bumps that are electrically connected to the first terminals.

However, Sugimoto et al teach The drive IC 5 may be mounted on the rear surface of the substrate via solder bumps 53 and 54 (column 14, lines 52-54).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the solder bumps as taught by Sugimoto et al. in the Kishigami because this would provide a display device which has a reduced size.

Regarding claim 13, Sugimoto et al. teach a control board 17 mounted on one of said first extended area Fig.4 (18) and said second extended area Fig.4 (18) corresponding to said control circuit board, mounted on one of said first extended area

and said second extended area, extends so as to be connected to an end of an input wiring portion formed close to a shorter side of the other of said extended areas.

Regarding claim 14, Sugimoto et al. teach the electrode terminals at both ends of the control board 17 are connected with the terminals on one side of the control board 17 of the circuit wiring 141 and 142 on the circuit board 14 by the connector 18 (column 13, lines 38-41) corresponding to said control circuit board further comprises a circuit-wiring pattern formed on a flexible insulating resin substrate and electronic components provided for controlling a driving of said display panel.

Regarding claim 15, Sugimoto et al. teach a control board 17 mounted on one of said first extended area Fig.4 (18) and said second extended area Fig.4 (18) corresponding to said control circuit board, mounted on one of said first extended area and said second extended area, extends so as to be connected to an end of an input wiring portion formed close to a shorter side of the other of said extended areas.

Regarding claim 16, Sugimoto et al. teach along the sides 12a and 12b are arranged circuit boards 14 and 14 having circuit wirings 141 and 142 (column 10, lines 53-55) corresponding to said control circuit board which inherently has a multilayer structure having an insulating layer interposed between a plurality of wiring layers in which predetermined upper and lower wiring layers are connected via a through hole.

Regarding claim 17, Sugimoto et al. teach the input terminals of the adjacent terminal board, connected portions of the junction and input terminals of the adjacent

flexible wiring boards being located on the peripheral portion of the display panel (column 23, lines 5-9) corresponding to said control circuit board includes a flexible input wiring portion.

Regarding claim 18, Sugimoto et al. teach the liquid crystal display device is provided with a display panel 11' in which is included an electrooptic material layer (see Figure 1).

Regarding claim 19, Sugimoto et al. teach a display device including a display panel, such as a liquid crystal display device, an EL (electroluminescence) display device (column 1, lines 8-10) corresponding to an electroluminescent material.

Regarding claim 20, Sugimoto et al. teach a flexible wiring board Fig.4 (19) with an integrated circuit drive (16) where the flexible wiring board connects the input terminal to the electrical component of the wiring circuit board.

Regarding claim 22, Sugimoto et al. teach the electrode terminals at both ends of the control board 17 are connected with the terminals on one side of the control board 17 of the circuit wiring 141 and 142 on the circuit board 14 by the connector 18 (column 13, lines 38-41) corresponding to said control circuit board further comprises a circuit-wiring pattern formed on a flexible insulating resin substrate and electronic components provided for controlling a driving of said display panel.

Regarding claim 23, Sugimoto et al. teach along the sides 12a and 12b are arranged circuit boards 14 and 14 having circuit wirings 141 and 142 (column 10, lines 53-55) corresponding to said control circuit board which inherently has a multilayer structure having an insulating layer interposed between a plurality of wiring

layers in which predetermined upper and lower wiring layers are connected via a through hole.

Regarding claim 24, Sugimoto et al. teach the input terminals of the adjacent terminal board, connected portions of the junction and input terminals of the adjacent flexible wiring boards being located on the peripheral portion of the display panel (column 23, lines 5-9) corresponding to said control circuit board includes a flexible input wiring portion.

Regarding claim 26, Sugimoto et al. teach a display device including a display panel, such as a liquid crystal display device, an EL (electroluminescence) display device (column 1, lines 8-10) corresponding to an electroluminescent material.

Regarding claim 27, Sugimoto et al. teach the electrode terminals at both ends of the control board 17 are connected with the terminals on one side of the control board 17 of the circuit wiring 141 and 142 on the circuit board 14 by the connector 18 (column 13, lines 38-41) corresponding to said control circuit board further comprises a circuit-wiring pattern formed on a flexible insulating resin substrate and electronic components provided for controlling a driving of said display panel.

Regarding claim 28, Sugimoto et al. teach along the sides 12a and 12b are arranged circuit boards 14 and 14 having circuit wirings 141 and 142 (column 10, lines 53-55) corresponding to said control circuit board which inherently has a multilayer structure having an insulating layer interposed between a plurality of wiring layers in which predetermined upper and lower wiring layers are connected via a through hole.

Regarding claim 29, Sugimoto et al. teach a flexible wiring board Fig.4 (19) with an integrated circuit drive (16) corresponding to said circuit board includes a flexible input wiring portion.

Regarding claim 30, Sugimoto et al. teach the liquid crystal display device is provided with a display panel 11' in which is included an electrooptic material layer (see Figure 1).

Regarding claim 31, Sugimoto et al. teach a flexible wiring board Fig.4 (19) with an integrated circuit drive (16) where the flexible wiring board connects the input terminal to the electrical component of the wiring circuit board.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean Lesperance whose telephone number is (571) 272-7692. The examiner can normally be reached on from Monday to Friday between 10:OOAM and 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard, can be reached on (571) 272-7603.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(571) 273-8300 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Jean Lesperance

Art unit 2674.

Date 9/5/2005

PATRICK N. EDOUARD
SUPERVISORY PATENT EXAMINER